

ABSTRACT OF THE INVENTION

A system and method for calibration of digital image capture devices is presented that allows the further development of e-commerce by ensuring that the digital image accurately represents the colors of the captured image. This simplified method provides a calibration of the relationship between a digital image capture device output and the human visual perception of the colors input into the device using easily available and affordable test targets, measurement devices, and software with a minimum of labor and expertise. This analysis may be performed using the data analysis tools of a conventional electronic spreadsheet having matrix multiplication and regression capability.

Specifically, the method normalizes the test target data to both black and white, and converts the normalized data into the color space of the capture device through white point adaptation. The raw captured image data is also normalized to both black and white, and is regressed with the converted, normalized target data to determine the expected measurement values. These values are used to compensate the device output to achieve a high level of color fidelity. To ensure that the level of fidelity is acceptable, the CIE color difference equations are used.